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ABSTRACT

In a continuation study, 12 students with dyslexia participated in muscle testing and exercises. Six areas were evaluated via pre- and post-tests: academics (using measures of spelling, reading, and math); parental observations of changes in their children (behavioral, academic or affective); perceptual drawing; oral reading; written language; and information retention. Eleven of the twelve students showed significant growth in one to six of the academic tests. Parental observations revealed 10 positive responses. There was no pattern evident in scores on the Slossom Perceptual Drawing Test. Six students showed positive significant results in accuracy on oral reading samples, and seven demonstrated significant comprehension improvements. Copies of letters written by parents are appended. (CL)

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DE-FUSING

DYSLEXIA

PART II

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June 27, 1986

EC 200595

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PREFACE

Special Education students in a special class assignment enter the program already three to seven years behind their grade level. Generally, these students have been in Special Education for several years. Usually, most display attitudes towards school ranging from boredom to disgust.

DE-FUSING DYSLEXIA

The De-fusing Dyslexia Project was a continuation of an experiment to determine if muscle testing and the ensuing corrections from the specific problem would have a positive effect towards student learning, motivation, and academic performance. Also, as a corollary to these positive results, it was hoped that students' attitudes towards school and learning, as well as behavior, would improve.

There was a total of thirteen students (one student moved to Florida in December) permitted to participate in the project by their parents. One student was a returnee from last year's project; the remaining students were all new to the experiment. Since this was the second year for the teacher as an evaluator, he was able to conduct the sessions at a slightly faster rate. This allowed two more students than last year into the project.

Pre and post testing was done once in September before any session was undertaken and, secondly, in April and May after the entire project had ended. Students continued to do their

homework exercises even after the end of the individual sessions of the project.

Each evaluative session was done in the class while the usual work routine was happening. A consultant, Gordon Stokes of Three in One Concepts and the teacher each worked with one student while the other students did their classroom assignments. This "business as usual" attitude allowed the sessions to blend with the other work. The unusual sessions became "usual" within the Tuesday morning schedule.

Mr. Stokes was at the school for five of the days during the scheduled sessions. He was at the first session in November, the last in April, and once each during the months of December, January, and February. His expertise discovered certain information which the less experienced teacher would not have uncovered. Some of the ensuing corrections would not have occurred if the teacher was the sole evaluator for the entire project.

The rest of the scheduled sessions was done by the teacher himself. As it developed the teacher was able to see all or most of the students in one day. Prior to the project's beginning, two days had been anticipated for all students to be seen. As the project continued, this allowed the teacher to see each student several more times than first anticipated.

Parents monitored the general corrections or homework exercises at home. Each night the parents signed a sheet given on Monday indicating completion of the exercises. The students brought the sheet to school so the teacher could verify the homework. The sheets were collected on Friday. Homework done over the weekend was verified by a note or phone call from the parents. Also, the students did the exercises over any holiday or vacation. Again, the parents verified the completion of the homework via a note or phone call.

Six sections were chosen to be analyzed: academic pre and post testing which involved such tests as the Wrat spelling, reading, and math test, the Brigance computation and comprehension math tests, and the Nelson paragraph reading comprehension test, parental observations of any changes in their child (behavioral, academic or affective), the Slossom Perceptual Drawing Test, an oral reading comparison, recorded on tape, written language comparison, and information retention or comprehension part.

Defining significant as anything above a year's growth, eleven of the twelve students showed significant growth in one to six of the academic tests. The growth ranged from an increase of 1.2 years (22% change) in one student to 5.5 in another. One of

the students showed no significant change. No student tested a negative significant change.

Parental observations were solicitated according to the following directions given by the teacher near the end of the project:

"Please note any changes, positive or negative, big or small, which you've seen in your child since the project began. The changes may be anything. Please respond by the end of April."

All of the parents responded via notes or letters although some responses were not delivered until the middle of May. Of the twelve responses ten were extremely positive. In noting the changes some of the comments in the letters were "improved attitude, less complaining, more responsible, better self-esteem, more motivated, and happier."

One of the letters from the parents was particularly impressive since it contrasted their son in two different situations: consistently doing the exercises and periods of not doing the exercises."....when he does put together a streak of successful exercises, the short term improvement is both striking and welcomed. His level of maturity, sense of responsibility to the family, and general attitude is so noticeable in its upswing as to constitute almost a break from his previous, disagreeable way of approaching his life."

Two students were observed by the parents to have changed little, either positively or negatively. One of these students was a student who jumped two grade levels on two academic tests, but whose attitude and behavior did not appreciablly change over the course of the project. The other student, although also showing a significant increase on one of the academic test did not change appreciably.

The Slossom Perceptual Drawing Test showed no pattern among the students. Defining a greater than 20% change as significant; six students improved significantly, four decreased significantly in their performance. One student showed no significant change while the remaining student showed no change at all; his pre and post scores being exactly the same.

These scores have been categorized in two ways: the change in the number of mistakes and that change in a percentage.

"+" or "-" 0 mistakes; 1 student

"+" or "-" 1-2 mistakes; 2 students

"+" or "-" 3-4 mistakes; 4 students

5-6 mistakes; 1 student

7-8 mistakes; 2 students

13-14 mistakes 2 students

"+" or "-" 0-10%	10-20%	20-30%	30-40%
1 student	1 student	2 students	3 students

40-50%	50-60%	60-70%	≠100%
2 students	1 student	1 student	1 student

The rate of the test, since the test was to be without a time limit, was discarded.

The oral reading samples were recorded, then analyzed according to the number of pauses or mistakes on the recording as well as the impressions of the evaluator. Six students showed positive significant results in improved accuracy. Ten students appeared to have either more flow and expression in their reading or clearer pronunciation or enunciation. The evaluator felt that one student was not as flowing or rhythmical.

The writing and comprehension section of the recorded reading were analyzed in a subjective mode based on two perspectives; immediate impressions of the writing samples and estimated change from the pre to the post sample. The comprehension part was judged by the number of accurate facts from the reading, either through complete sentences or increasing sentence complexity.

Roberta Lannes, art instructor at Sierra Vista Junior High School, evaluted the writing. In analyzing the pre and post project samples she graded the changes on a 1 to 5 scale. Anything greater than a change of one on the scale was defined as significant.

From a first impression nine students improved in some aspect of the clarity of the space, slant, size, or shape of the writing, although not significantly since the change on the scale was a one. The letters were either larger, clearer or stronger, or more uniform. Two students improved significantly while one student showed a significant decrease in uniformity. Approximate percentages of change in the areas ranged from 10-20% for the nine students while the three other students indicated changes of 20-40%.

In the area of comprehension, seven of the twelve students indicated significant changes by stating at least one more accurate fact in the past reading of a different book at their reading level. The number of bits written ranged from an increase of one to an increase of eleven. Of the remaining five students, four remained exactly the same with no increase or decrease in the number of bits retained. One student showed a significant decrease with one less bit being written.

Finally, the evaluator solicited comments from eight of the twelve students about the project. Five students were extremely positive about changes which they felt had happened to them. One student was slightly positive. Two students said they noticed no change although both had significant scores in at least two of the academic tests.

On the next page(s) is a chart with the information categorized.

*SIGNIFICIANT ACADEMIC CHANGES

(Significant = + or - = 1 years change or = than a 20% difference in pre & post testing)

ANY SCORE WHICH WAS + OR - 1 YEARS CHANGE OR LESS WAS NOT RECORDED.

	Wrat (Math computation, spelling, word recognition) Brigance (Math computation & comprehension)	Parental Observation	Slosson Drawing Test	Writing Sample Slant size, spacing, shape.	Information Retention	Oral Reading	Students Comments
Student 1 7th Grade Age 13 Male	+ 1 to 1.5 + 2 Wrat and Brig. math comput.	More care in personal appearance. More responsible.	3 less mistakes + 60% change.	No. sig. chng.	No. sig. chng.	Voice muted, but appeared to be more rhythmical.	
Student 2 7th Grade Age 13 Male	+ 5 to 5.5 Word Rec. + 2.0 Brig. math comput.	Grades greatly improved, frustrational level improved a little. Improved school work.	No change	No sig. chng.	+ sig chng. + 3 bits	No. sig. chng. Sounded clearer pronunciation and stronger enunciation.	Student - "I read better, words are easier, and I'm doing more difficult math; I feel more mature and handle things a little bit better."
Student 3 7th Grade Age 14 Male		Improved a great deal. Seems to enjoy school more.	4 less mistakes + 67% change	+ 40% change. Clearer, more space & size	No sig. chng.	+ 33% change. Clearer emotional content; more flowing.	
Student 4 7th Grade Age 13 Male	+ = 2.0 Word Rec.	A building of honesty, self-worth and even willingness to do homework.	2 more mistakes. - 22% change.	-40% sig. chng. Less uniformity in the four areas.	+ sig. chng. + 2 bits	+ 16% change. One less mistake; more flowing.	Student - "I've made more friends, learned more, and learning feels a little easier."
Student 5 7th Grade Age 13 Female	+ 2 to 2.5 Word rec. + 2.0 Brig. Comput. + 2.5 Wrat Math	Dramatic increase in academic achievement. Improved focus	3 less mistakes + 33% change	No sig. chng.	+ sig. chng. + 11 bits	No sig. chng. in accuracy. Sounded stronger; more emotional content.	Student - "I've noticed no change."
Student 6 7th Grade Age 13 Female	+ 2.0 Word rec. + 2.0 Wrat math	No. sig. chng.	8 less mistakes + 50% change	No. sig. chng.	No sig. chng.	No sig. chng. in accuracy. Not as flowing or rhythmical.	Student - "My attitude has changed a little for the good and work is easier, still having difficulty with men teachers."
Student 7 7th Grade Age 12 Female	= 22% increase Word Rec.	Great improvement in morale. More motivated to do well in school and at home.	4 more mistakes. - 13% change.	No. sig. chng.	+ sig. change. + 1 bit	No sig. chng. in accuracy. Clearer, more flow and rhythm.	Student - "I've noticed no change."
Student 8 8th Grade Age 14 Male	+ 1.5 Wrat math	No sig. chng.	8 more mistakes. - 50% change.	No sig. chng.	No sig. chng.	+ 50% sig. chng. 3 less mistakes, less frustration in the second reading.	
Student 9 7th Grade Age 12 Male		Improved attitude, higher calmed down, more mature. Mixes well socially.	13 less mistakes. + 36% change.	+ 40% sig. chng. More uniformity in space, size & shape.	+ sig. chng. + 3 bits	+ 50% sig. chng. 1 less mistake, more flow and emotional content.	Student - "I don't get as mad or bothered when something goes wrong."
Student 10 7th Grade Age 13 Male	= 1 to 1.5 Wrat [redacted] math + 1.5 Word rec. + 2.1 Math Compre.	More confident; happier. Improved attitude.	1 more mistake. - 25% change	No sig. chng.	+ sig chng. + 3 bits.	+ 33% sig. chng. 1 less mistake; stronger enunciation; more flow, clear pronunciation.	Student - "..In higher levels I feel better myself."
Student 11 8th Grade Age 14 Male	+ 2.0 Brigance sentence writing.	Improved concentration, attitue and demeanor.	14 more mistakes. - 108% change.	No sig. chng.	- sig. chng. -1 bit	+ 50% sig. chng. 2 less mistakes.	
Student 12 7th Grade Age 12 Male	+ 2.5 Work rec.	Increased maturity, responsibility and general attitude when doing the exercises consistently.	6 less mistakes. 35% change.	No sig. chng.	+ sig. chng. + 4 bits	0 sig. chng. in accuracy; more flowing, clear pronunciation.	Student - "I feel more responsible, don't lose things as much and math is a little easier."

Of the six categories (student comment category not included) two students improved significantly in two categories, five students in three divisions, three students in four aspects, and two persons in five categories.

In another perspective, 91-92% of the students improved significantly in at least one division (academic) with no significant negative changes and 83% improved in another (parental comments) with no significant negative differences. 58% in the information retention showed a positive significance while 8.5% one student indicated a negative significance. The Slossom was a 50% positive significance, 33% negative significance. The oral reading section was 50% positively significant while the writing was 17%.

Futhermore, the parental comments were extremely impressive. The similarity of words and perceptions set a pattern indicative of positive change. Also, as expected by the evaluator, this indicated that the individual corrections and general exercises helped clear particular stressors.

The project was an outstanding success, more so than last year. This was probably due to the longer duration of the project and the greater number of individual sessions and corrections done for each student. The corrections appeared to lessen or remove some blockages to the learning process including emotional so that the tasks became more understandable and easier. An analogy to this is a hurdle race where the hurdles initially are one or two feet apart. In running the race people constantly are stumbling over the hurdles (learning blockages). The corrections soften or remove some of these hurdles so that instead of one or two feet apart the hurdles might start to be nine or ten feet apart. In this way the person, in doing this "learning race" would have more continuity before stumbling again.

In viewing the past two projects the evaluator also believes that students must continue to do the exercises and be seen for individual sessions at least another year. The first year project of ten weeks and this year's project of five months in which only one student was repeating (the other students either graduated, moved from the area, or were promoted to another class) were not of sufficient duration for some students to retain the initial successful inroads made previously.

In consideration of this, the evaluator has asked most parents to continue having their child do the exercises during the summer at home. Also the evaluator will seek funding for the following year for returning students in or out of his classroom and new students into his class. The evaluator will eventually seek funding to extend this project to other classes in the school or other schools.

Finally, this project with its techniques appears to complement the still required necessities of good teaching and great effort on the part of both teacher and special education student. The techniques greatly increase the possibilities that the effort by the student will be successful on an academic or emotional level, which is, after all, one of the major goals of education.

The following addendum are copies of the parents' notes or letters written to the teacher when asked for observations or changes in their child.

5-8-86

Mr. Hawkesworth,

Since James has been in the Class I have noticed a big change in him. He takes more care in his personal appearance. He does his home work with out me getting after him. He helps more with the yard work and house work.

Thank You.

May, 1990

To Whom it may Concern,

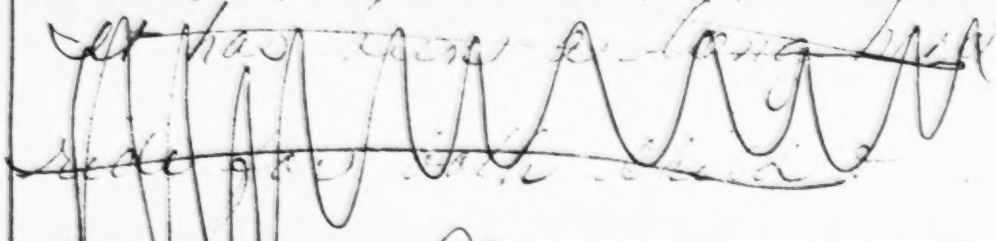
My son, Robert Reed has shown great improvement in the school year. His grades have greatly improved. He still has some problems with motivation, frustration and being lazy. I have noticed at home that his frustration level while doing homework, has improved a little. He has a problem with feeling sorry for himself, to use for an excuse not to get his school work done, or his household chores. We choose to ignore that at home.
I feel the exercises he has been doing for class, have improved his schoolwork.
My husband and I both feel that Mr. Wasserwald is a great teacher, and has really worked hard with Robert to improve his academic skills.

To whom it may concern,

In my opinion Bobby was improved a great deal this year. He seems to enjoy school much more. It was never my opinion that he isn't very intelligent, but he does lack the concentration needed to complete and understand his school work. However at this time Bobby seems to be doing well and enjoys keeping up his good grades. We & d both care looking forward to when he can participate in regular 4th high classroomer.

Thank you.

Phillips behavior



Phillip's struggle to behave like society rules have pre-set, has been a long, hard ride for both [illegible] & daughter.

During the year there were times of good behavior but always [illegible] signs of frustration [illegible]

punishment
consequence
if he has
this child ~~be~~ does what
he's told to reason with;
with or without force.

Show maturity and the
progress and show consistent
consequence for ~~xx~~ xx
behavior,
~~a child~~ that results are
now beginning to occur ~~where~~
the change is most recent.

Mrs. Wainwright's part

Where dealing with this
child
It has been hard to remain
positive with Phil - because
he has ~~been~~ negative & has brought
nervous days of trouble to many
We will have comments that
are overwhelming, but they are true
and faithful witnesses. The change
these buildings - myself, my-
with [illegible], I want to
to [illegible]
[illegible]

of this is what the program has done for me. Now there is a reason to live, but without the human element to enhance the plan of the program - it would not have been possible.

Thru constant guidance Nancy & Ree Wasserwald & Stefanie Blatt my husband & children & Phillip Hackel

~~I can never repay~~ ~~change~~ and those efforts are greatly appreciated

Dear Mr. Wasserwald,

I'm writting this in referance to Christel my daughter who is a student in your class. I would like to thank you for your time, effort and the special attention Christel has received this school year. Both Cyndy and I have noticed a dramatic increase in her level of academic achievement. I believe the specialized instruction and programs provided by Sierra Vista has given Christel the help she has needed this year. Christel still has her periods of losing focus but I've also seen improvement in this area. I appreceate the many phone calls I have received from you when this happens. This has helped me to be informed about her progress and deal with her better at home. Again we would like to thank you for the extra time I know you have spent with her and the phone calls to keep me informed. I really believe the extra effort has been a positive influence for Christel.

Sincerely,

May, 19[illegible]

5-5-36

Mr Wasmund

You asked for an evaluation of the exercise program and if I felt it helped Janet.

I have not seen any improvement in her attitude at home. She has rebelled at doing the exercises. I have not seen that much improvement in her grades since the starting.

May 16, 1986

Dear Mr. Wasserwald,

Regarding my daughter, Vicki, I have noticed a great improvement in her morale and she is so much more motivated to do well in school and at home.

Her grades indicate that during the last six to eight weeks, she is, happily, quite interested in learning again.

Thank you,

May 5, 1986

We feel that there isn't a real change in our son's school work, as the results of the grant that Mr. Wasserwald has had.

In his personality there seems to be a little hostality and a negative reaction to the class. in general, if this is from the class or just a growing stage.

We are not saying the grant wasn't benificial, We are just saying that we don't see a difference in our son as a result of the grant

May 1986

Lee,

It is very difficult to pinpoint major changes in David. When you live with someone on a daily basis the changes are rather subtle. I do know that when friends or relatives see David after some time has lapsed that there are always several comments about how much he has matured and calmed down.

Last spring when we were faced with the decision of where to place David it was very difficult. I must say that a year later we all agree that the right decision was made. This has really been a turn around year for David. He has adjusted much better to junior high than we had anticipated. He really seems to enjoy school. We have not heard one negative comment about school, Teachers, or going to school. Last year these were numerous. He also seems to have made lots of new friends and gets along better with the other kids.

One of the major areas I can see improvement is in baseball. When David has had a disappointment on the field he seems to be able to shake it off & go on with the game. Last year he would let things bother him a lot more.

All in all I feel that David is coping with his frustrations at school and in his personal life much better.

May 14, 1986

Lee,

David has shown improvement in his attitude toward verbal instruction and directions. His threshold for frustration is much higher than it was. He temper doesn't show as often as fast as long as it use to.

The biggest problem is his outlook toward homework, he feels it is a form of punishment. I feel that this attitude was fostered by a very structured environment the last two year which seemed to support this outlook.

On a social level he is mixing well and enjoys himself. David has made new friends and gets along well with his baseball team. His attitude toward School is very good. We don't have any comments about our library school or classes.

The only other problem he still seems to have is following several directions at a time, he tends to forget.

I am very happy with his growth this year, and I hope it continues

May 8 1986

Jorge in the past several months has been feeling pretty content & happier about himself, & especially school. He feels confident because he has moved to a higher level.

He has been doing his exercises even though he doesn't believe they help him to move ahead in the reading; I encourage him to do them and explain how they might work and he is being consistantly doing them.

His attitude & can say has improved considerably how he used to feel about special Education but he still needs improvement in other areas.

So all together yes he has make progress but he retarded the program.

Thank you.

Oct 23, 1986

During the Physical Therapy session used a Rascal Cross by Joe Dassenaldi, over the tile, upon my own, Eric has been involved we have seen significant improvements in his behavior and attitudes. When he is regularly exercising and participating he is able to concentrate and excell in his study habits. When he lapses, he does not maintain the level at which he was working. He will continue to use these tools to keep enhancing his learning skills and develope in all areas of his growth potential

5/19/86

Mr Wasserwald;

First of all, it is difficult to assess the overall effect of the exercises on Dave's long term improvement in attitudes, performance etc., because at home, his performance of the exercise ritual is sporadic, infrequent + questionable in its completeness when he does do them.

However, when he does put together a streak of successful exercises, the short-term improvement is both striking and welcome. His level of maturity, sense of responsibility to the family, and general attitude is so noticeable in its upswing as to constitute almost a break from his previous, disagreeable way of approaching his life.

Being forced by regular attendance at school to do the exercises on a daily basis produces a behavior pattern by week's end that is almost exemplary in every way. However by Monday morning the effects have disappeared in the all-too-familiar squabbles with siblings and the inattention to the exercise routine.

In a setting where his problems were the only ones commanding our attention, we feel that the exercises would have a lasting positive effect on his behavior, attitudes, + sense of responsibility + self-discipline

We appreciate the opportunity to have Vance participate in the test program and feel that the effects, while erratic, are all positive.

Thank You